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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,512	12/26/2000	Jean-Pierre Giacalone	TI-31754	4129

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EXAMINER
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CHAUHAN, ULKA J

ART UNIT	PAPER NUMBER
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2676

DATE MAILED: 12/19/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/748,512

Applicant(s)

GIACALONE ET AL.

Examiner

Ulka J. Chauhan

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. Claims 1-14 are pending.

#### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-3, 5-11, 13, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,920,353 to Diaz et al.**

4. As per claims 1, 2, 3, 5, and 6, Diaz teaches an architecture of a multi-standard decoder 200 which can decode input that is encoded in any of a number of different formats and that is used for video telephony [col. 5 line 66-col. 6 line 15, col. 6 lines 25-28, and Fig. 2]. Diaz discloses that the decoder 200 is composed of functional blocks or modules connected to memory 160 ("*a random access memory*") and a processor 75 ("*a processor ... for executing software instructions for processing images and video*") to allow the processor 75 to control the access of the functional blocks [col. 12 lines 40-47]. The decoder 200 modules include block decoder module 50 containing IDCT module 46, motion compensation engine 90 containing half-pel filter 78 for performing half-pixel interpolation, an encoder module 88 containing DCT circuit 112 ("*a transform coding hardware accelerator*") and motion estimation engine 86 ("*a motion estimation hardware accelerator*") [Figs. 2 and 3]. Diaz discloses that the buffer 126 is connected to the motion estimation engine 86 and is part of the main memory where the macroblocks in the I and P frames are stored in the buffer 126 and retrieved when they are the

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prediction macroblocks needed for the comparison (“**one or more hardware accelerators retrieve data from the random access memory**”) [c. 9 ll. 13-19]. Diaz also discloses that the processor 75 allows some of the functional blocks of the decoder 200' to be performed in software in the processor 75 to either completely replace some or part of some of the functional blocks, or to allow the function to be performed in either hardware or software [c. 13 ll. 38-42 and c. 8 ll. 5-15]. And Diaz discloses that the motion estimation engine 86 determines motion vectors between the incoming macroblock and the prediction macroblock and stores the determined motion vectors in the memory 160 [c. 16 ll. 35-43]. Diaz discloses that the encoded bitstream is the output of the data MUX 120, which can be performed by the processor 75, and which is also the output of the encoder module 88 [c. 9 ll. 30-33]; and that when the decoder 200 is coupled to a processor 75, the processor controls the encoder module 88 (“**perform a function on the data, and return a result to the processor**”) [c. 9 ll. 34-36].

5. Claims 7, 10, 11, 13 and 14 are similar in scope to claims 1, 2, 3, 5, and 6, and are rejected under the same rationale.

6. As per claims 8 and 9, Diaz discloses that a DMA engine 162 in the decoder that controls all of the interfaces with the memory 160 [col. 11 lines 52-53].

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. **Claims 4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,920,353 to Diaz et al and U.S. Patent No. 5,790,208 to Kwak et al.**

10. As per claims 4 and 12, Diaz does not expressly teach calculating a “mean absolute difference function”. Kwak teaches an apparatus for estimating frame-to-frame motions between two frames comprising a motion estimation unit 4 for calculating a mean absolute difference [Abstract]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Diaz and Kwak such that the motion estimation engine of Diaz’ invention is implemented to calculate the mean absolute difference as taught by Kwak for the purpose of easy implementation and good estimation performance.

#### ***Response to Arguments***

11. Applicant's arguments filed 10/10/03 have been fully considered but they are not persuasive. Applicant argues that Diaz fails to teach an instruction to the processor 75 causes either motion estimation engine 86 or IDCT 66 to perform a function and return a result to the processor. Claim 1 recites a processor for executing software instructions for processing images and video, wherein some of the instructions initiate function performed by one or more of said

hardware accelerators where the result is returned to the processor. Diaz discloses that when the decoder 200 is coupled to a processor 75, the processor controls the encoder module 88 [c. 9 ll. 34-36]; that processor 75 allows some of the functional blocks of the decoder 200' to be performed in software in the processor 75 to either completely replace some or part of some of the functional blocks, or to allow the function to be performed in either hardware or software [c. 13 ll. 38-42 and c. 8 ll. 5-15]; and that processor 75 functions to output the encoded bitstream which is the output of the encoder module 88 [c. 9 ll. 30-33]. Therefore Diaz does teach this limitation.

### ***Conclusion***

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

13. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Ulka Chauhan** whose telephone number is **(703) 305-9651**. The examiner can normally be reached Mon.-Fri. from 9:00 am to 4:00 pm. If attempts to reach the

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examiner by telephone are unsuccessful, the examiner's supervisor, **Matthew Bella**, can be reached at **(703) 308-6829**.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,  
Arlington, VA, Sixth Floor (Receptionist).

15. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 305-4700.



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Ulka J. Chauhan  
Primary Examiner  
Art Unit 2676

ujc  
December 16, 2003